

### **REMARKS**

Applicants acknowledge the allowance of claims 12-17.

Applicants have amended claim 1 to correct an error in the wording and claim 4 to correct the dependency. Claims 1 – 17 are presently pending in this application.

The Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Inagaki et al. (“Inagaki”) and argues that Inagaki discloses in Figures 4 and 5 all the elements of claim 1.

Contrary to what the Examiner appears to believe, Inagaki does not, in fact, disclose *all* the components of the claimed invention. Specifically, Applicants have not found in the Inagaki publication any teaching or disclosure of “a diffractive element which generates an array of input beams from the deflected beam,” as recited in claim 1. In fact, Inagaki does not disclose any element that generates an array of input beams from a beam that is deflected by an acousto-optical deflector.

The convergent lens element 5 Inagaki discloses is not the same as the diffractive element of the claimed invention. Figure 6 (which shows the optical paths in the multi-beam scanning optical apparatus depicted in Fig. 5) appears to disclose a convergent lens element 5 that simply redirects an existing array of beams generated by an acoustooptic element. Inagaki explains, “the laser beam L is diffracted by the acoustooptic element 3 and divided into laser beams L<sub>1</sub> through L<sub>3</sub>. Thereafter, the laser beams L<sub>1</sub> through L<sub>3</sub> are incident to the polygon mirror 6 through convergent lens 5” (col. 9, lines 39 – 42). In other words, the acoustooptic element 3 itself diffracts an incident beam L into multiple beams L<sub>1</sub> through L<sub>3</sub> which are subsequently passed through convergent lens 5. Applicants find no teaching of a “diffractive element,” separate from the acoustooptic element, which “generates an array of input beams”. No mention is made, whatsoever, of diffracting the beams emergent from the acoustooptic element.

In other words, Inagaki suffers from the same deficiency as Smith, Jr. (4,203,672), described in Applicants' communication of October 31, 2006, insofar as he does not teach or disclose a diffractive element which generates an array of input beams from the deflected beam.

Further, the Examiner has not pointed out any passage of the Inagaki reference that discloses a control circuit which "varies a characteristic of the AOD control signal to account for errors in the scanning system," as is recited in claim 1. While Inagaki discloses a modulating circuit that produces an input electric signal provided to the acoustooptic element, this input electric signal does not account for errors in the scan. Inagaki explains:

The image data processor 21 receives image data from a bit map memory of a printer and produces image signals which indicate which of the output beams...are to be turned on...The image signals are sent to the modulating circuit 22 [which] selects one or more from the three high-frequency signals...as the ones to be turned on and in this way, produces an input electric signal to be inputted to accoustooptic element 3 (col. 7 line 66 – col. 8 line 8).

In other words, the image data processor 21, by producing image signals, determines which of the various frequency signals ( $f_1$  to  $f_3$ ) is communicated to the acoustooptic element 3 via the modulating circuit 22. There is no teaching or suggestion that the input electrical signal accounts for any kind of error in the scanning system.

For example, Applicants find no indication that Inagaki teaches accounting for errors in the scanning system on the basis of a feedback signal used by the control circuit for generating the control signal. In certain embodiments of the present invention, "the system includes a closed loop feedback control system that reduces the intensity fluctuations of the beams during scanning and which also provides a fast way to position the beam array in a cross-scan direction to correct for stage errors or beam displacement errors" ([0028] published application). Nor do Applicants find any indication that Inagaki teaches accounting for errors in the scanning system on the basis of a table of corrections used by the control circuit for generating the control signal. In certain embodiments of the present invention, the system "includes an open loop table driven modification

Application No. 10/698,822  
Amendment dated July 24, 2007  
Reply to Office Action of January 29, 2007

Docket No.: 6256/USA/NBD/OPTICS  
0107262.00184US2

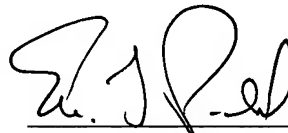
of beam intensity and position to correct for various other errors" ([0028] published application).  
There is no disclosure of these examples of accounting for errors, or any other example, for that matter.

For the reasons articulated above, Applicants believe that the claims are in condition for allowance and ask the Examiner to allow the application to issue.

The fee for a three-month extension accompanies this response. Please apply any charges not covered, or any credits, to Deposit Account No. 08-0219.

Respectfully submitted,

Dated: July 24, 2007



Eric L. Prah  
Registration No.: 32,590  
Attorney for Applicant(s)

Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, Massachusetts 02109  
(617) 526-6000 (telephone)  
(617) 526-5000 (facsimile)